AMENDMENTS TO THE CLAIMS

Please amend the claims to read as follows:

1. (Original) An instrument for measuring dynamic I-V conduction characteristics of a semiconductor device-under-test comprising a means to apply a signal at two or more channels of a device-under-test, comprising an adjustable dc bias and superimposed fast, generally rectangular synchronous bipolar pulses, and a means to measure the current response thereto at each of the two or more channels.

2. (Original) A measuring instrument in accordance with claim 1 wherein the applied pulse wave form is essentially critically damped so as to achieve a minimum rise time up to the point where the pulses become substantially flat.

3. (Currently Amended) A measuring instrument in accordance with claim 1~~, or claim 2~~ further comprising means to measure dc I-V conduction characteristics of a semiconductor device-under-test by applying a dc signal at both the input and the output of the device-under-test.

4. (Original) A measuring instrument in accordance with claim 3 wherein the instrument is therefore capable first of measuring the dc I-V characteristics, and adapted to set a single bias point based on measured dc I-V characteristics and to use this bias point as a starting point to access or measure all operating instantaneous I-V points by application of the bipolar pulse bias, to obtain a representative indication of the dynamic I-V conduction characteristics.

5. (Currently Amended) A measuring instrument in accordance with ~~any preceding~~ claim 1 wherein the means to apply an adjustable bias at both the input and the output of a device-under-test comprise a means to apply a pulse at each of the input and the output each of which can be of either positive or negative sense and separately variable, that is two synchronised bipolar pulses.

6. (Currently Amended) A measuring instrument in accordance with ~~any preceding~~ claim 1 wherein the means to apply the adjustable bias at the input and output comprises a high stability voltage source serially connected to the input/output via a resistor.

7. (Original) A measuring instrument in accordance with claim 6 wherein the high stability voltage source is further serially connected especially at the input side through a low pass filter.

8. (Original) A measuring instrument in accordance with claim 7 wherein the resistance is followed by a series inductor and a shunt capacitor to form the low pass filter.

9. (Currently Amended) A measuring instrument in accordance with ~~any preceding~~ claim 1 wherein current and/or voltage measuring means are provided to measure input and response currents and voltages within 5 ns, and in particular within 1-2 ns.

10. (Currently Amended) A measuring instrument in accordance with ~~any preceding~~ claim 1, further comprising ~~wherein~~ input and output pulse generators ~~are~~ in the form of operational amplifiers having output impedances kept to no more than a few Ω even at RF and microwave frequencies.

11. (Currently Amended) A measuring instrument in accordance with ~~any preceding~~ claim 1, further comprising ~~wherein~~ input and output pulse generators configured to generate short pulses down to a few tens of ns in pulse length.

12. (Currently Amended) A measuring instrument in accordance with ~~any preceding~~ claim 1, further comprising a remote head including at least the response measuring means, to which the device-under-test may be directly connected.

13. (Currently Amended) A measuring instrument in accordance with ~~any preceding~~ claim 1 further comprising a remote head including at least means to generate the superimposed fast, generally rectangular, synchronous bipolar pulses, to which the device-under-test may be directly connected.

14. (Original) A method for measuring dynamic I-V conduction characteristics of a semiconductor device-under-test comprising the steps of:

applying an adjustable bias signal comprising an adjustable dc bias and superimposed fast, generally rectangular synchronous bipolar pulses at two channels of the device-under-test;

rapidly measuring the current response thereto at the said two channels.

15. (Original) The method of claim 14 further comprising the step of measuring the dc I-V conduction characteristics of a semiconductor device-under-test by applying a dc signal at both the input and the output of the device-under-test.

16. (Original) The method of claim 15 comprising the steps of:

first measuring the dc I-V conduction characteristics of a semiconductor device-under-test by applying a dc signal at both the input and the output of the device-under-test;

using the measured dc I-V characteristics to set a single bias point;

accessing all operating or instantaneous I-V points from this bias point by application of the bipolar pulse bias;

measuring the response to obtain a representative indication of the dynamic I-V conduction characteristics.

17. (Currently Amended) The method of ~~one of claims~~ claim 15 ~~14 to 16~~ wherein each of the input and output pulses is separately applied to be either positive or negative sense and separately variable, that is that the applied pulses comprise two synchronised bipolar pulses.

18. (Currently Amended) The method of one of ~~claims~~ claim 14 ~~to 17~~ comprising use of the instrument of ~~one of claims~~ claim 1 ~~to 11~~.